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PCT/DE2003/003939



PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 1.2029 PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/DE2003/003939	International filing date (day/month/year) 28 November 2003 (28.11.2003)	Priority date (day/month/year) 13 December 2002 (13.12.2002)
International Patent Classification (IPC) or national classification and IPC G06T 5/00, H04N 5/217		
Applicant FORSCHUNGSZENTRUM JÜLICH GMBH		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

- I Basis of the report
- II Priority
- III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV Lack of unity of invention
- V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI Certain documents cited
- VII Certain defects in the international application
- VIII Certain observations on the international application

Date of submission of the demand 03 July 2004 (03.07.2004)	Date of completion of this report 21 March 2005 (21.03.2005)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

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International application No.

PCT/DE2003/003939

I. Basis of the report

1. With regard to the elements of the international application:^{*}

the international application as originally filed
 the description:

pages _____ 1-10 _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

the claims:

pages _____, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages _____ 1-8 _____, filed with the letter of 15 December 2004 (15.12.2004)

the drawings:

pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

the sequence listing part of the description:

pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
 the language of publication of the international application (under Rule 48.3(b)).
 the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

contained in the international application in written form.
 filed together with the international application in computer readable form.
 furnished subsequently to this Authority in written form.
 furnished subsequently to this Authority in computer readable form.
 The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
 The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

the description, pages _____
 the claims, Nos. _____
 the drawings, sheets/fig _____

5. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-8	YES
	Claims		NO
Inventive step (IS)	Claims	1-8	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-8	YES
	Claims		NO

2. Citations and explanations

1. Reference is made to the following document:

D1: US-A-5 923 722.

2. Claim 1

2.1 A method for digital image processing is defined by a differential equation specified in the claim. This differential equation is used to calculate a target signal from which the capacitative afterglow effect of the image sensor is calculated.

Document D1 discloses that the output signal is composed of a "source term" (see figure 2, reference sign 22a) and an additional term (21a). Furthermore, the additional term depends on preceding output signals (see column 2, lines 38 to 47) and this term must be subtracted in order to obtain the corrected image signal. Moreover, it is known that an exponential function is the solution to a differential equation, such as equation (1) cited in the present application, without a "source term". However, the fact that a variation with time may occur in the position of the afterglow effect, for example if the images move, is not taken into account in D1. The differential equation specified in claim 1 takes this variation into account.

The differential equation specified in claim 1 is also not suggested by any of the other international search report citations.

Consequently, claim 1 complies with the requirements of PCT Article 33(2) and (3).

2.2 Industrial applicability exists in the field of digital image processing and television technology.

3. **Dependent claims**

3.1 The dependent claims relate to advantageous embodiments of the subject matter of claim 1 and therefore also comply with the requirements of PCT Article 33(2), (3) and (4).

3.2 In claim 7, the method claimed in claims 1 to 6 is characterized by a device feature (FPGAs). However, the object of the device is not clearly defined. The subject matter of claim 7 is therefore unclear (PCT Article 6).

3.3 The device claimed in claim 8 is not clearly defined (PCT Article 6), because no device features are specified. The claim attempts to define the subject matter in terms of the result to be achieved, but in so doing merely states the problem to be solved. To overcome this defect, the technical features necessary for achieving this result would have to be included in the claim. However, this appears to be a difficult task, because the description lacks the required support.

3.4 The parameter estimation mentioned in claim 3 is defined only in claim 2. Consequently, claim 3 should be dependent only on claim 2.

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4. Contrary to PCT Rule 5.1(a)(ii), the description does not cite document D1 or indicate the relevant prior art disclosed therein.